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# Portland Area Comprehensive Transportation Study

Maine State Highway Commission

Maine Department of Economic Development

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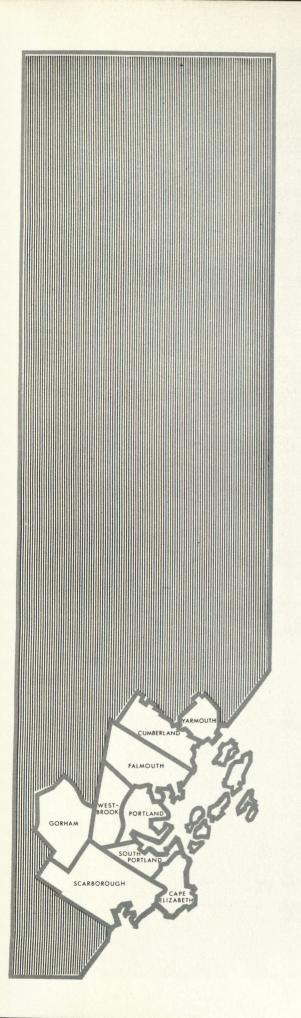


Summary Report

MAINE STATE HIGHWAY COMMISSION
MAINE DEPT. OF ECONOMIC DEVELOPMENT



This study was financially aided through a federal grant from the Urban Renewal Administration of the Housing and Home Finance Agency, under the Urban Planing Assistance Program authorized by section 701 of the Housing Act of 1954, as amended, and through highway planning and research funds made available by the U.S. Department of Commerce, Bureau of Public Roads.



# PORTLAND AREA COMPREHENSIVE TRANSPORTATION STUDY

Prepared for the MAINE STATE HIGHWAY COMMISSION Commissioners

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and the

MAINE DEPARTMENT OF ECONOMIC DEVELOPMENT Commissioner

Standish K. Bachman

in cooperation with the

 $\mbox{U.\,S.}$  DEPARTMENT OF COMMERCE, BUREAU OF PUBLIC ROADS and the

HOUSING AND HOME FINANCE AGENCY April 1965

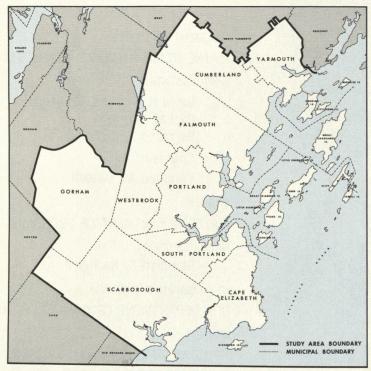
EDWARDS AND KELCEY, Engineers and Consultants

### INTRODUCTION

The Federal Aid Highway Act of 1962 stipulates that after July 1, 1965, metropolitan areas of over 50,000 population must have completed comprehensive traffic and planning studies prior to the expenditure of any federal highway funds in these areas. The Portland Area Comprehensive Transportation Study (PACTS) is a part of this orderly national, state and local program for the systematic study and evaluation of all transportation facilities. The 300 square mile PACTS area contains these cities and towns.

Community	1960 Population
Portland South Portland Westbrook Scarborough Falmouth Gorham Cape Elizabeth Yarmouth Cumberland	22,788 13,820 6,418 5,976 5,767 5,505 3,517
TOTAL	139,122

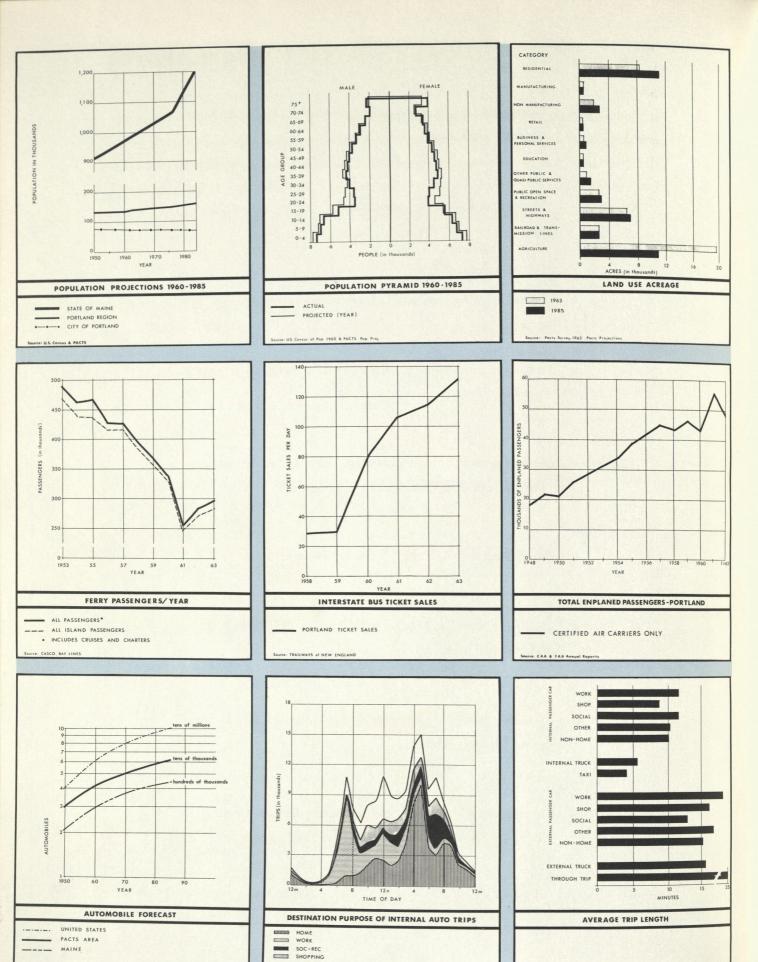
These nine cities and towns comprise Maine's largest metropolitan area, its most important center of commerce and the largest port in New England in terms of gross tonnage.



PACTS STUDY AREA

### **OBJECTIVES**

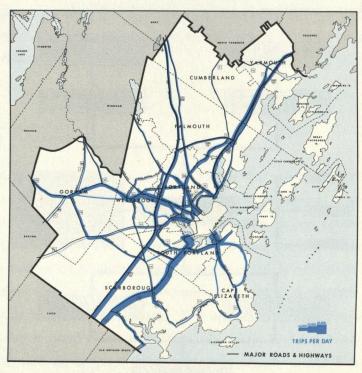
- Survey and analyze present transportation demands, characteristics and facilities.
- Study and evaluate present and probable future land uses.
- Correlate land use and travel demands.
- Evaluate various alternate systems of arterial streets and highways.
- Appraise mass transit potentials best suited to serve the current and foreseeable population.
- Recommend street and highway systems.
- Evaluate state and local policies and practices with respect to financing.
- Create a priority program for development of the proposed highway system.
- Determine jurisdiction and authority for developing different segments of the recommended system.
- Evaluate financial resources and capabilities.



### SURVEYS AND PROJECTIONS

An extensive data collection effort, unprecedented in the State of Maine for transportation study purposes, was undertaken to provide a sound basis for making the several PACTS projections and recommendations. During the summer and fall of 1963, the following surveys were completed within a four-month period.

- Home Interview Survey covering 3,700 dwelling units.
- Taxi Survey covering 40 out of 80 registered taxis for a total of about 5,000 taxi trips.
- Truck Survey which sampled one out of every six, or
   1,160 trucks operating in the region.
- Cordon Line Survey which intercepted all roads cutting across the internal survey boundaries and included 37,000 interviews.
- Land Use Survey covering 300 square miles and recording all identifiable land uses.

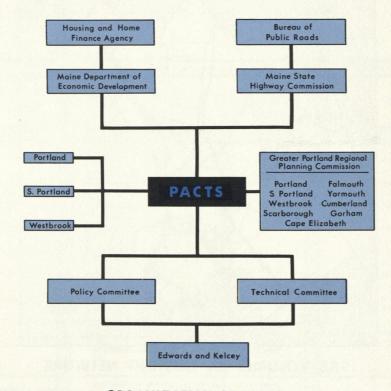


1985 VOLUMES ON EXISTING NETWORK

### **INNOVATIONS**

Two significant firsts for the State of Maine have resulted from this study. One is an inseparable relationship which has been developed between land use and traffic; in fact, a great deal of the cost of this study was spent in deriving this relationship. Traffic volumes on existing and proposed facilities for the 1985 target year were obtained through projections of land use, social and economic data, rather than through projections of travel data. In effect, existing land uses were correlated with existing traffic generation; the land use, social and economic elements which are relatively stable were forecast for the target year and then converted back to comparable traffic figures. Thus the primary basis for the highway recommendations made in this study are the land use, social and economic data that were collected and forecast.

The second innovation was in the area of administrative organization. For one of the first times nationally, a transportation study has been guided closely at the local level by a Policy Committee and a Technical Committee which comprise the nucleus of the study and contain representation from a number of local, state and federal agencies. The committees are of prime importance since the proposed continuing function of transportation planning in the region will depend to a great extent on the ability of these committees to carry on the initial effort.



ORGANIZATION OF PACTS

### **RECOMMENDATIONS**

The majority of the PACTS recommendations deal primarily with the region's highway transportation system since 93 percent of all trips in the region in 1963 were made by automobiles, trucks or taxis. The other seven percent were made on public transportation facilities. Furthermore, the extent of motor vehicle travel over the next several years is expected to increase rather than decrease as the growth in motor vehicle registration continues to exceed the population growth rate. The major recommendations of the study are summarized below and in the table on pages 14 and 15.

### **INTERSTATE ROUTE 295**

Only one new segment of expressway is proposed — the completion of Interstate Route 295 through the Portland region from Tukey's Bridge to a connection with the Maine Tumpike in the vicinity of Exit 7. The best route location would be through South Portland to a direct connection with the interchange at South Portland. This route would cost less and carry more traffic than a comparable expressway in the direction of Westbrook. The facility would not only offer relief to Route 1 in South Portland which is at present perhaps the most heavily congested section of roadway in the region, but would also provide a direct connection to Portland from the south via Route 1 or the Maine Turnpike.

### WESTBROOK ARTERIAL

A new traffic facility toward the west, built to the design standards of a major arterial street with separated roadways, has been proposed to connect downtown Portland and the Interstate System with the central area of Westbrook and Route 25 west toward Gorham. Such a facility would, when built, relieve the traffic pressure building up on Brighton Avenue as a result of recent commercial development. The proposed facility would also serve as an excellent access to the central portions of Westbrook, including its industrial traffic generators. This arterial would be designated Route 25 and would remove a great deal of the through traffic that now traverses downtown Westbrook. It should be of great value not only to Portland and Westbrook through which it passes, but also to Gorham and the region as a whole, since access to and from the west into downtown Portland would be greatly facilitated.

### **ROUTE 302 BYPASS**

The proposed Route 302 Bypass would relieve Route 302 into Portland, between the Westbrook city line and the downtown peninsula. The bypass would utilize, in addition to a new segment of roadway, a portion of existing Baxter Boulevard and a new extension of Preble Street.

Forest Avenue which would be the principal beneficiary of this bypass already experiences congestion at Woodfords and Morrills Corners. Intersection improvements have been recommended for these locations to accommodate existing capacity deficiencies since traffic flow is difficult along the entire length of Forest Avenue through Portland.

The bypass is considered an important improvement for a number of reasons. Elimination of through traffic would permit more orderly and greater development along the right-of-way than currently exists. Furthermore, the bypass would permit greater traffic service which the public will demand in the future. This would mean no congestion, a reasonably free flow of traffic and no interference from traffic entering or leaving abutting properties. Baxter Boulevard would be so designed that it would retain its aesthetic values. Few trees would be removed and trucks would still be prohibited. There is a potential here for the development of a roadway which would parallel the function and beauty of shore drives elsewhere in the country, such as the Outer Drive in Chicago and Storrow Drive in Boston.

### CONGRESS STREET AND PARK AVENUE - ONE WAY SYSTEM

A principal recommendation to improve the peninsula's circulation is the conversion of Congress Street and Park Avenue between Libbytown and Weymouth Street to a one-way couplet. This would allow maximum capacity through the area and could be accomplished quite simply with a minimum of local impact.

A major consideration here is the effect of an interchange with Interstate Route 295. This interchange would be one of the busiest along the entire route and, unless adequate capacity provisions are made on the surface streets, congestion will result.

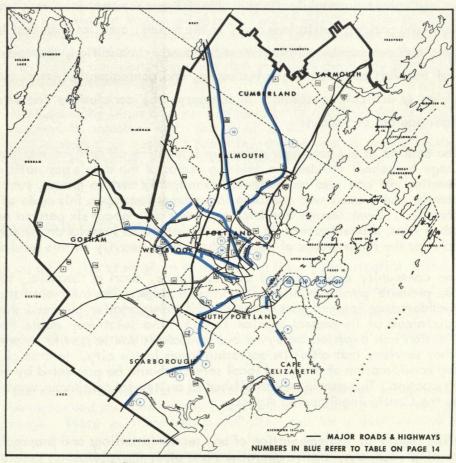
The proposed circulation change does little damage to the area in terms of access and the proposal can be utilized regardless of the interchange design finally adopted. Although Congress Street lies in a better location as an arterial route, it does not have adequate capacity. Park Avenue, however, does have sufficient capacity but does not have as desirable a location. Thus, combining the two routes would yield the necessary capacity, desired convenience, and a capability of accommodating I-295 interchange traffic.

### FRANKLIN STREET

This street should become a major cross-peninsula arterial extending from Marginal Way to Commercial Street. At present, Franklin Street is narrow and carries fairly little traffic. The proposed design calls for a four-lane divided facility with provision for turning movements.

Lending major significance to this proposal would be Franklin Street's connection to an interchange with the Interstate Route in Back Cove. The location of the street roughly forms the end limit of the central business district as does State Street at the opposite end.

In addition to providing cross-town access, the new Franklin Street would be an important route to the downtown area. In addition to the connections at its ends, it also will tie in with Middle, Congress and Cumberland Streets which lead directly to the central business district and its parking areas.



RECOMMENDED IMPROVEMENTS

### **PUBLIC TRANSPORTATION**

At the present time, public transportation plays only a small role in the region's total travel picture. Furthermore, the prognosis for the future for most elements is, at best, stability with little or no growth.

### LOCAL BUS SERVICE

The region's bus system, although declining in patronage since World War II following a national trend, has in recent years shown signs of stability. It is now leveling off and displays some promise of continuing at the current level of service. The Portland Coach Company, the region's major bus company, is operated quite efficiently and currently makes a small profit; coverage and service are reasonable considering the size of the area and the fare structure encourages usage.

However, there are problems in the bus business. The running times of many lines are twice equivalent automobile times. Street improvements involving one – way systems and curb parking restrictions may, in the future, conflict with best interests of bus users and compromise solutions must be found. In addition, the open nature of much of the Portland area limits bus usage, and consequently better, more frequent service is difficult to obtain. In summary, the conclusions concerning the local bus service are as follows:

- 1. The decline of bus passenger patronage is leveling off partly due to increased usage by school children, a growing sector of the area's population. This leveling off can also be attributed to usage by certain groups, such as the elderly and women who continue to be dependent upon this mode of transportation. Even though bus trips represent only about six percent of total urban trips, discontinuance of bus service would be harmful and inconceivable for the three groups of people who rely so heavily on this service.
- 2. The community should extend any assistance, short of financial, to foster and promote greater public transportation usage. The bus system should be considered an integral part of the overall transportation plan and should be maintained at its present service level. The relatively stable financial situation now experienced by the bus company is due in part to its profits on other services that offset its operating losses in the city. In case of crisis, any consideration of dropping local service should be prevented by community action. This should be established as an item for continuous surveillance by the Continuing Planning Agency.
- 3. With regard to implementation of any recommendations and proposals concerning roadways, traffic operations and other improvements, careful consideration should be extended at all times to the effect such improvements may have on the operation of the bus system and its patronage.

### TRANSPORTATION IN CASCO BAY

The ferry service provided for residents of the off-shore islands by the Casco Bay Lines, water-taxis and private boats is not entirely unique, although it represents a segment of the transportation problem not encountered in most other areas. Here again, the problem of providing necessary service to these off-shore residents must be balanced against the abilities of private enterprise. The following conclusions have been drawn in connection with transportation in Casco Bay:

- The Casco Bay Lines is now providing adequate service to the islands, considering the islands' population, scheduled service, and general public comments.
- 2. Future service requirements for the islands will depend primarily on their rate of development, particularly since the islands' total year-round population decreased between the 1950 and 1960 censuses.
- 3. Water-taxis provide a useful service to the islands' residents, and particularly to summer inhabitants. At the present time, the Casco Bay Lines and the private water-taxi operators are not directly competitive, and thus both of these services can subsist. Because of its heavy investment in equipment and its need for higher volumes on fewer runs, the Casco Bay Lines can be expected to concentrate on its more lucrative runs in the future. At the same time, private water-taxis can continue to service those segments of the islands' transportation needs that cannot be met conveniently by a fixed-schedule operation.
- 4. The Casco Bay Lines does not appear to be in the financial or legal position required to construct and maintain all of its terminal facilities. Therefore, public support of terminal facilities on the islands, either at the state or local level, seems a warranted objective for the region.

### AIR TRANSPORTATION

Particular attention has been given to estimating the future potential of the Portland Municipal Airport as a major air hub. The estimated potential has been compared to the existing plant and several improvements have been recommended to bring the airport up to future passenger and airplane requirements. Briefly, these recommendations are:

- The terminal building at the Portland Municipal Airport lacks the size, convenience and services normally provided at airports in Portland's population range. There is, therefore, a definite need for a new terminal building.
- 2. The potential future increase in passenger levels will be directly dependent on population and economic growth. The activity at the airport is now quite high in relation to the region's population and there is no unexplored or great potential for growth within the region itself.

- 3. The major runway should be extended to 6,100 feet to accommodate medium range turbo-jet, and turbo-prop transports at maximum landing and take-off weights. This is based on the type of aircraft that will probably be used in the future to service the region's air transport needs.
- 4. Most trips to the airport come from downtown Portland. Although access between the Main Turnpike and the airport is acknowledged as being poor, the small number of trips from the Turnpike to the airport does not justify the construction of a direct connection to the airport, nor does it justify the expenditure of any important sum of money for improved access from the Maine Turnpike. Even if such improvements were constructed, it is unlikely that traffic volumes would increase significantly between the airport and the Turnpike.

### **REGIONAL PLANNING FACTORS**

City and regional planning considerations are of the utmost importance to a comprehensive transportation study for two reasons. First, a transportation system is for the people; it is therefore essential to know the size and composition of the population, their trip making habits, and the uses to which they put their land. Second, future travel projections are based on extrapolations of social, economic and land use factors rather than on extrapolations of travel itself.

This second factor must be clearly understood in considering the land use inputs to PACTS. Future travel demands as indicated in this study and the consequent recommendations are based on projections of land use factors only. Using existing land use and travel data, it is possible to convert future values of land use and planning factors into travel values. Thus when considering the traffic volumes projected for 1985, it is imperative to keep in mind that these figures are, in effect, land use planning projections.

Analyses of the social and economic factors in the PACTS area suggest that the following trends will occur in the two decades between 1965 and 1985:

- 1. Population will continue to grow at the modest pace that it has shown in the 1950-1960 decade.
- 2. The economic and employment levels will also continue to grow at a very moderate rate.
- 3. The land use pattern will not change substantially, although growth will occur; however, the region will continue to reflect a trend towards greater urbanization.

A number of significant changes will continue to exert themselves within these overall patterns of limited growth. Although the region will continue a trend toward urbanization, there will be substantial shifts of population and economic development to the suburbs. Newly developed suburban land uses will become part of the overall urban pattern, and there will also continue to be a major increase in automobile ownership and usage at a rate greater than either population or economic growth.

The general conclusions derived from the planning analyses have greatly influenced the PACTS highway recommendations which are designed to provide better access between the suburbs and downtown Portland and to reduce central area congestion by several means, including a separation of through and local traffic.

### **FUTURE APPLICATION OF PACTS**

One of the most important aspects of PACTS is its continuing nature. The information collected during the course of the study will be transferred to a data center located in the Portland area which will be at the disposal of local planning agencies, and other branches of local and regional government. The data already collected will be supplemented by a continuing data input which will flow into this center to enable the recommended transportation plan to be adjusted and brought up to date in the future on the basis of fresh information.

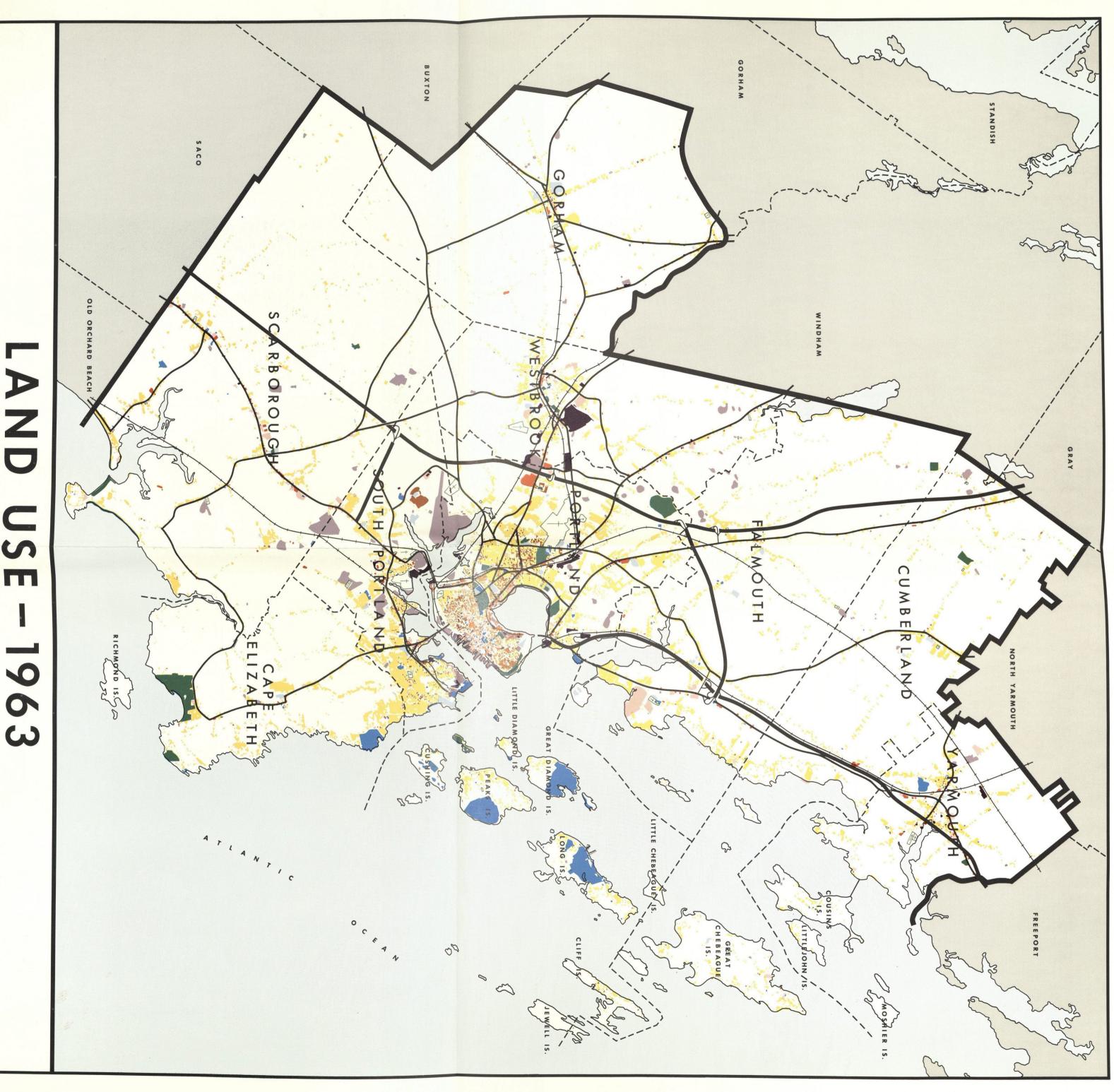
The Policy and Technical Committees, which played such important roles in the initial phase of PACTS, will continue to function in the future. Their future significance will be similar to their contribution during the initial effort. The Technical Committee will be responsible for the collection of data to keep the study current, and for review of the technical aspects of the transportation plan itself and its relationship to the region's overall comprehensive planning activities. The Policy Committee will not only continue to serve as the link between the study and the individual communities, but will also be in a position to recommend additional studies or updatings. Although the size of the Portland region does not warrant a full-time transportation planning effort in the future, the committees will ensure that the initial effort is kept current to provide a useful tool for regional planning.

## SUMMARY OF HIGHWAY RECOMMENDATIONS

	NAME OF FACILITY	TOTAL COST
EXPRESSWAYS		
EXPRESSWATS	Interstate - 295	2,125,000
	Route 1 Spur (Scarborough)	
ARTERIALS		
	Westbrook Arterial  Stage I { Church St Saco Rd. Stroudwater - Church St. Stage II Saco Rd Rte. 25	345,000 210,000
	Stage II Saco Rd Rte. 25	465,000
	Route 302 By pass  Baxter Blvd. – Morrills Corner  Morrills Corner – Warren Ave.  Warren Ave. – Rte. 302 (Westbrook)	390,000 485,000 880,000
	Route 1 (South Oak Hill - Willowdale Road	600,000
	Route 9 (North)	200,000
	Route 77 So. Port. (Commerce St.) Cape Eliz. (2 Sections)	300,000
	Route 100	
	Route 302  Morrills Corner – Woodfords Corner  Morrills Corner  Woodfords Corner	170,000
	Baxter Blvd. Baxter Blvd. Bridge Connector	290,000
	Brighton Avenue Commercial Street East Bridge Street Franklin Street Marainal Way	300,000
	Preble Street Extension Congress St. – Marginal Way Marginal Way – Forest Avenue	. 75,000
	State Street	
INTERSECTIONS		
MIEROEOTIONS	Broadway & Main Street (South Portland)	
	+ PEEERS TO MUMPERS ON MAR ON PAGE O	

<sup>\*</sup> REFERS TO NUMBERS ON MAP ON PAGE 9.

PRIMARY RESPONSIBILITY	LOCAL SHARE	S.H.C. SHARE	CONSTRUCTION PERIOD	MAP KEY*				
State Highway Commission State Highway Commission State Highway Commission	I :::	\$12,926,000	1967–1970 1967–1970 1967–1970	1				
State Highway Commission		2,058,000	1970-1975	. 2				
Westbrook \$ State Highway Commission	170,000  	175,000 210,000	1970–1972 1973–1976 1976–1977	3				
State Highway Commission State Highway Commission State Highway Commission	190,000			4				
State Highway Commission State Highway Commission State Highway Commission State Highway Commission	Ī :::	300,000	1965–1970 1965–1970 1965–1970 1975–1980	. 6				
State Highway Commission		150,000	1965–1966	. 9				
Portland & State Highway Commission	- :::	  	 					
······ ·········		-	-					
Portland		250,000	1972-1974 1980-1985	. 13				
Portland	150,000	580,000		16				
Portland Por	75,000 70,000 60,000	70,000	1968–1976 1967–1968 1970–1975	20				
Modified signal system – channelization Fully adjusted traffic density signal controllers – channelization Median Islands New traffic signals (Contemplated by Westbrook) Fully actuated traffic density signal – channelization								



- SINGLE MULTI-FAMILY RESIDENTIAL RESIDENTIAL
- RETAIL
- BUSINESS Qo
- RECREATION
- CEMETERIES
- PUBLIC OPEN SERVICES SPACE 20
- PUBLIC Qo QUASI-PUBLIC BUILDINGS

EDWARDS AND KELCEY -

NOTE: IN MULTI-USE PARCELS

ONLY PREDOMINANT USE

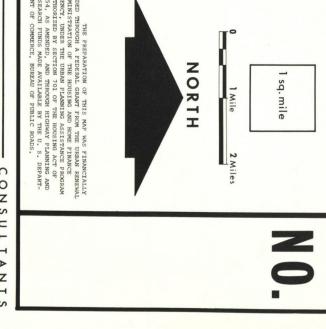
WATER AGRICULTURAL NON-MANUFACTURING MANUFACTURING

or

VACANT

EDUCATION

- MAJOR RAILROADS ROADS & HIGHWAYS
- IS SHOWN.



CONSULTANTS

